

CLAIMS

1. A system for enhancing an audio system, the audio system delivers audio output to an audio output terminal, said system comprising:

a wireless transmitter that connects to the audio output terminal and wirelessly transmits the audio output provided by the audio system; and

a personal audio device usable by a user to hear the audio output, said personal audio device including at least:

a wireless receiver capable of receiving the audio output transmitted by said wireless transmitter;

a data store for storing user information;

a controller operatively connected to said data store and said wireless receiver, said controller operates to produce customized audio output by modifying the audio output received by said wireless receiver based on the user information; and

a speaker operatively connected to said controller, said speaker produces an audio sound output in accordance with the customized audio output.

2. A system as recited in claim 1, wherein said speaker is a directional speaker.

3. A system as recited in claim 2, wherein said controller produces ultrasonic drive signals based on the customized audio output and supplies the ultrasonic drive signals to said directional speaker for output of the audio sound output in a directionally constrained manner.

4. A system as recited in claim 1, wherein the user information comprises a user hearing profile.
5. A system as recited in claim 1, wherein the user information comprises at least one user preference.
6. A system as recited in claim 1,
wherein said personal audio device further obtains environmental information pertaining to the vicinity of said personal audio device, and
wherein the customized audio output produced by said controller is dependent on the environmental information.
7. A system as recited in claim 6, wherein the environmental information includes at least a noise level, and wherein the output volume of the audio sound is dependent on the noise level.
8. A system as recited in claim 6, wherein said personal audio device further comprises:
at least one environmental sensor that acquires the environmental information.
9. A system as recited in claim 6, wherein the environmental information is determined based on a position of said personal audio device or the user.
10. A system for enhancing an audio system, the audio system delivers audio output to an audio output terminal, said system comprising:

a wireless transmission apparatus that connects to the audio output terminal to receive audio output from the audio system and wirelessly transmits a customized audio output, said wireless transmission apparatus including at least:

a data store for storing user information; and

a first controller operatively connected to said data store, said first controller operates to produce the customized audio output by modifying the audio output received by said wireless transmission apparatus based on the user information; and

a personal audio device usable by a user to hear the customized audio output, said personal audio device including at least:

a wireless receiver capable of receiving the customized audio output transmitted by said wireless transmission apparatus;

a second controller operatively connected to said wireless receiver to receive the customized audio output that has been received, said second controller further converts the customized audio output into audio output signals; and

a speaker operatively connected to said second controller, said speaker produces an audio sound output in accordance with the audio output signals.

11. A system as recited in claim 10, wherein said speaker is a directional speaker.

12. A system as recited in claim 11, wherein the audio output signals produced by said second controller are ultrasonic drive signals based on the customized audio output, and the ultrasonic drive signals are supplied to said directional speaker for output of the audio sound output in a directionally constrained manner.

13. A system as recited in claim 10, wherein the user information comprises a user hearing profile.

14. A system as recited in claim 10, wherein the user information comprises at least one user preference.

15. A system as recited in claim 10,
wherein said personal audio device further obtains environmental information pertaining to the vicinity of said personal audio device, and
wherein the customized audio output produced by said first controller is dependent on the environmental information.

16. A system as recited in claim 15, wherein said personal audio device further comprises:

at least one environmental sensor that acquires the environmental information.

17. A system as recited in claim 15, wherein the environmental information is wirelessly transmitted to said first controller.